Title: Dynamic Encoding Algorithms and Inline Message Decryption
Inventor(s): Maclen Marvit, et al.
Serial No.: 09/923,847
Docket No. 53635-0505

FIG. 1

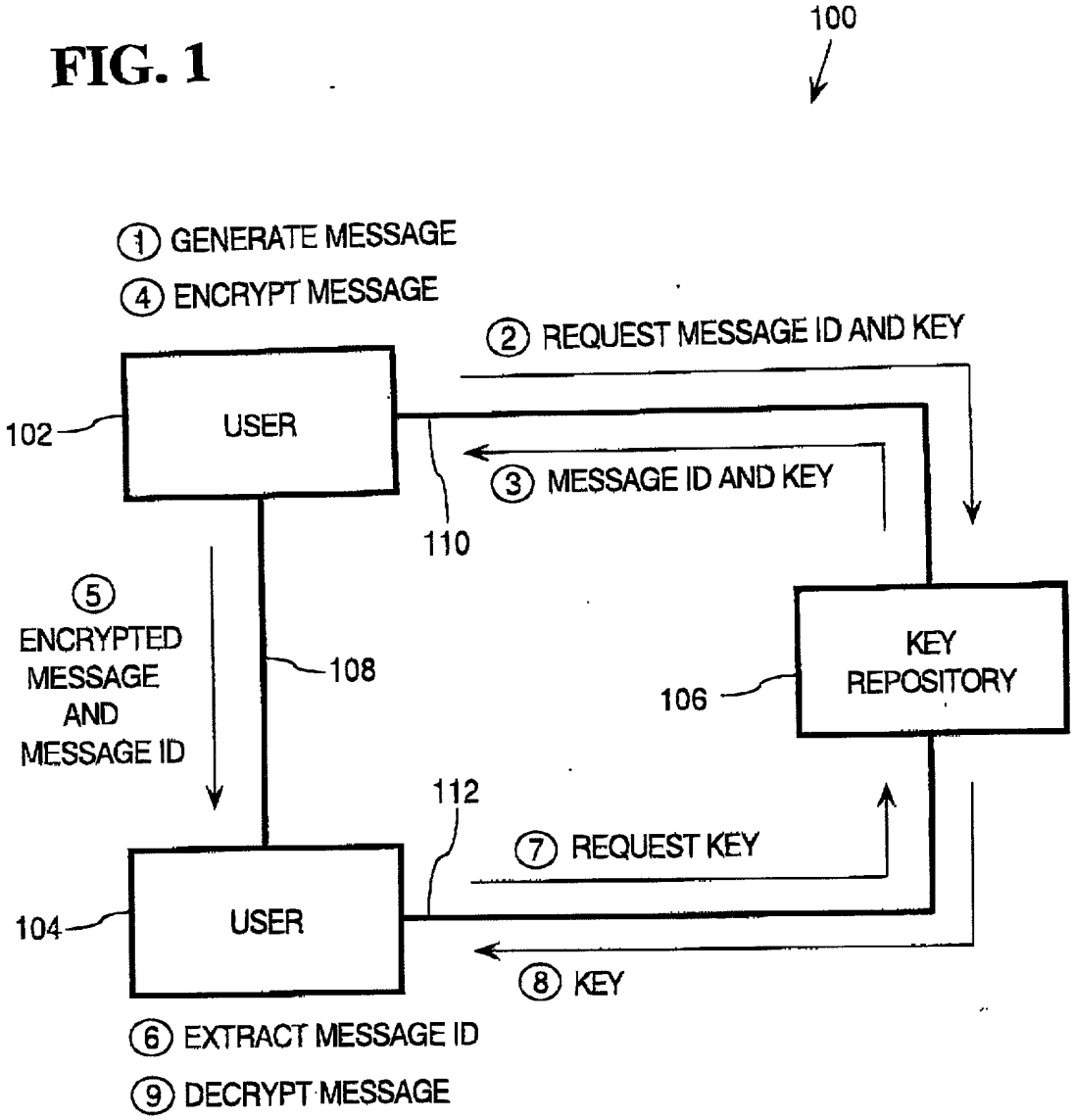

FIG. 2

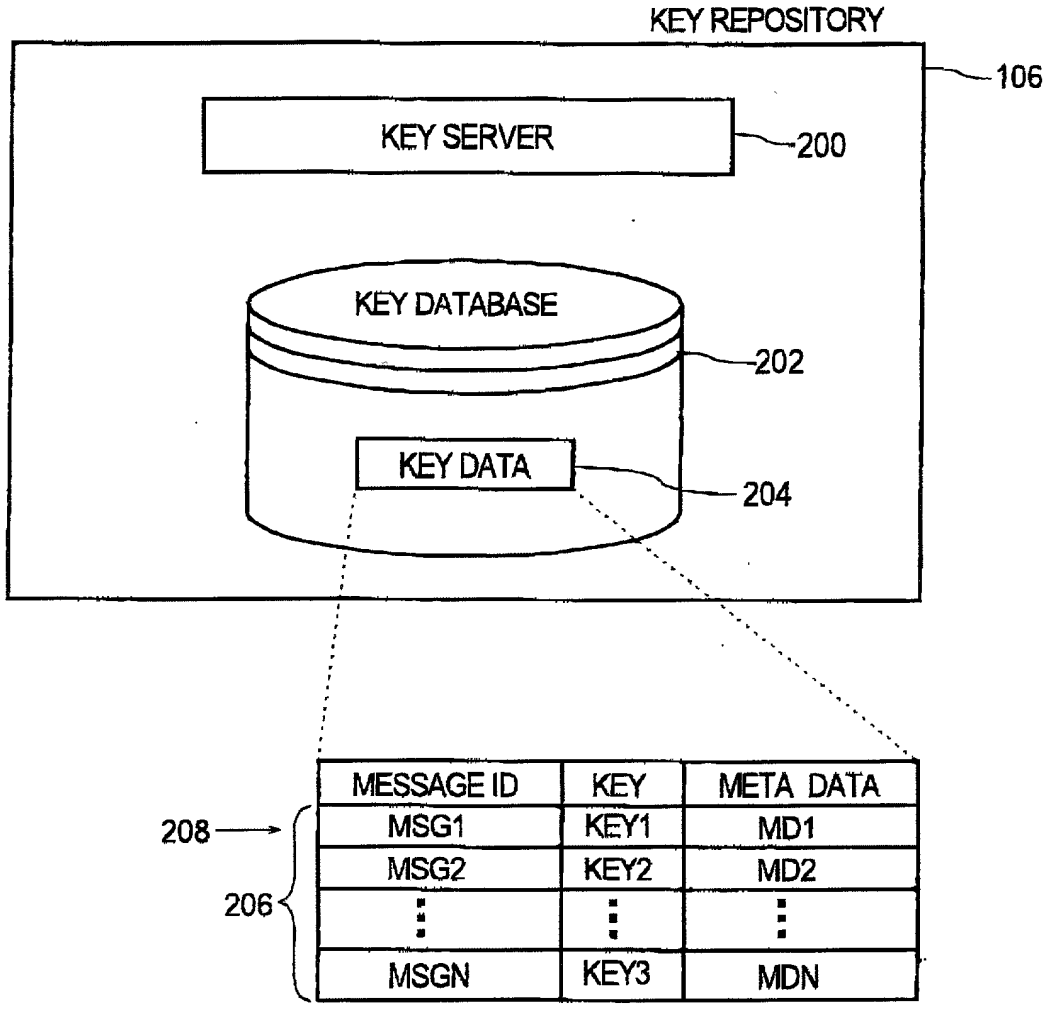
KEY REPOSITORY
106
KEY SERVER
200
KEY DATABASE
202
KEY DATA
204
208
206
MESSAGE ID
KEY
META DATA
MSG1
KEY1
MD1
MSG2
KEY2
MD2
MSGN
KEY3
MDN

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FIG. 3A

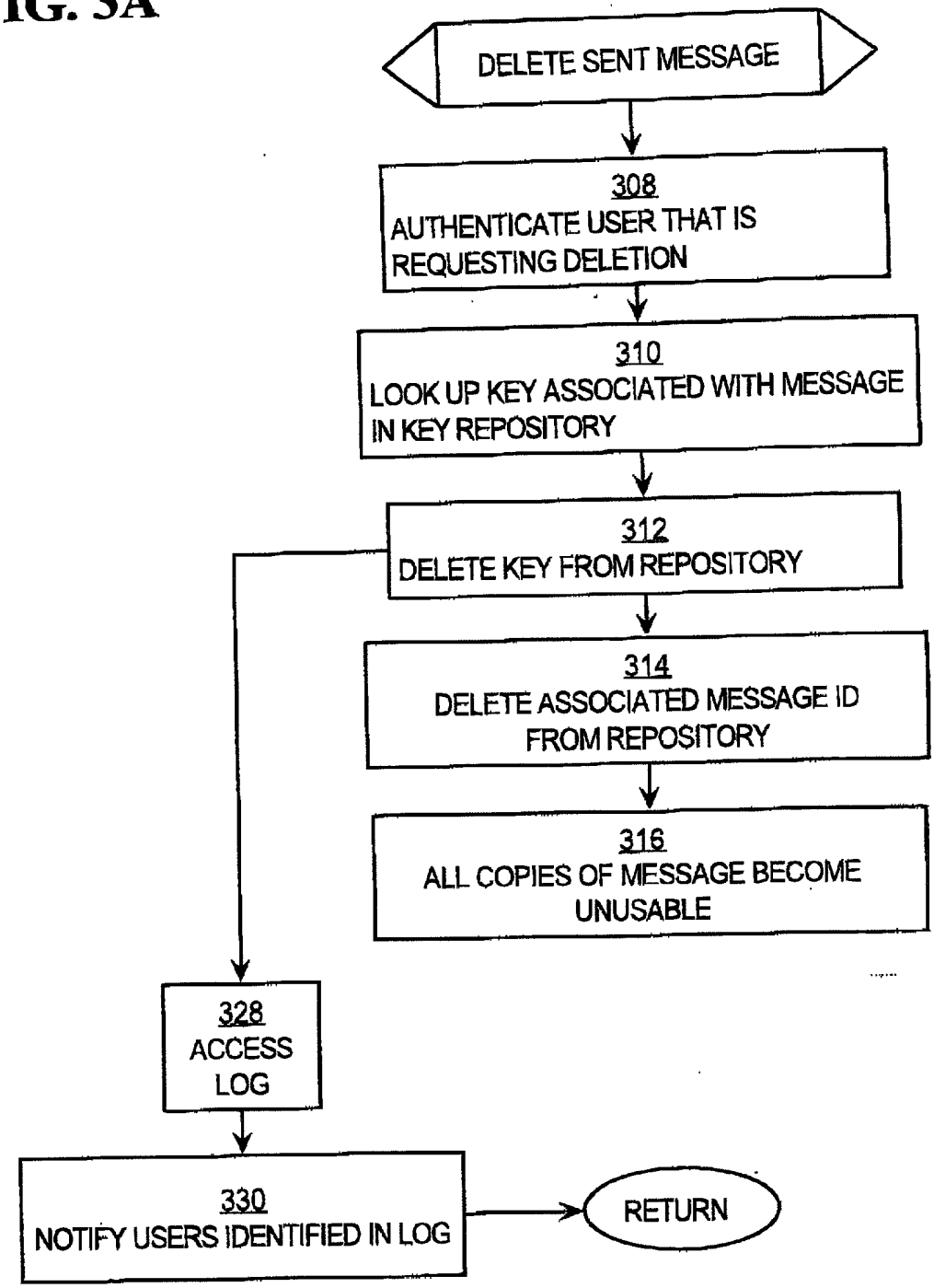

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FIG. 3B

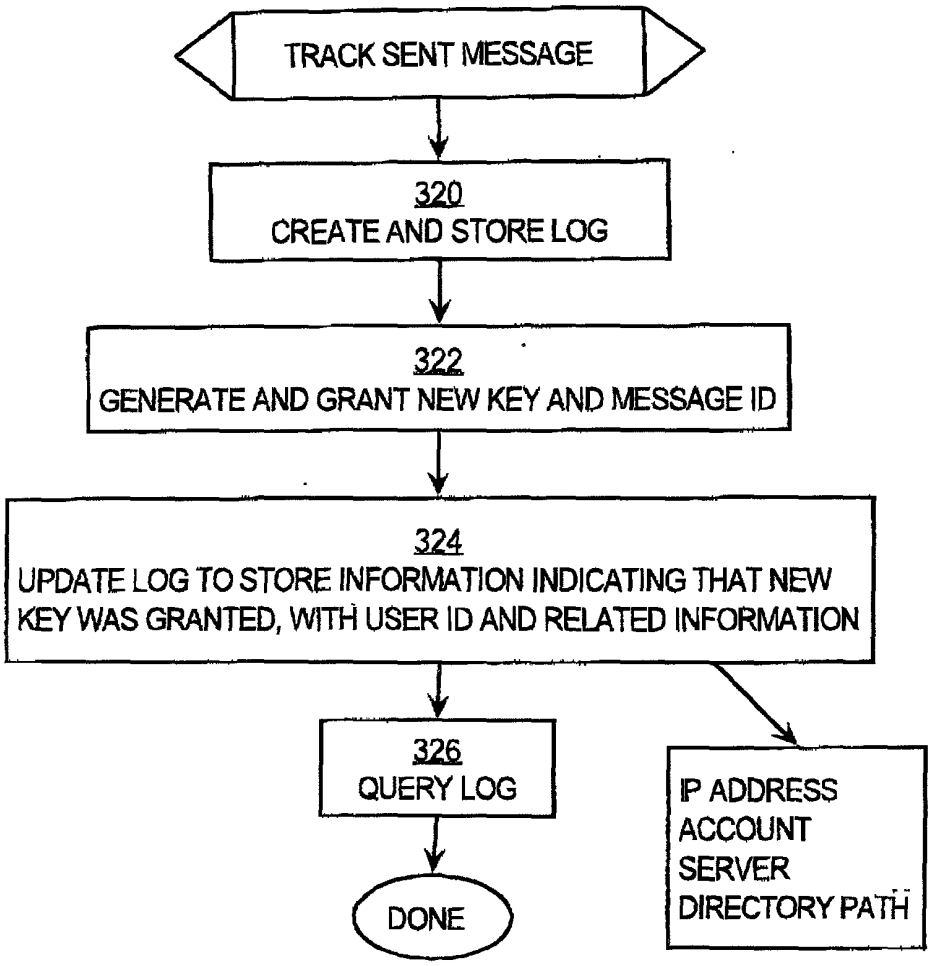

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FIG. 4A

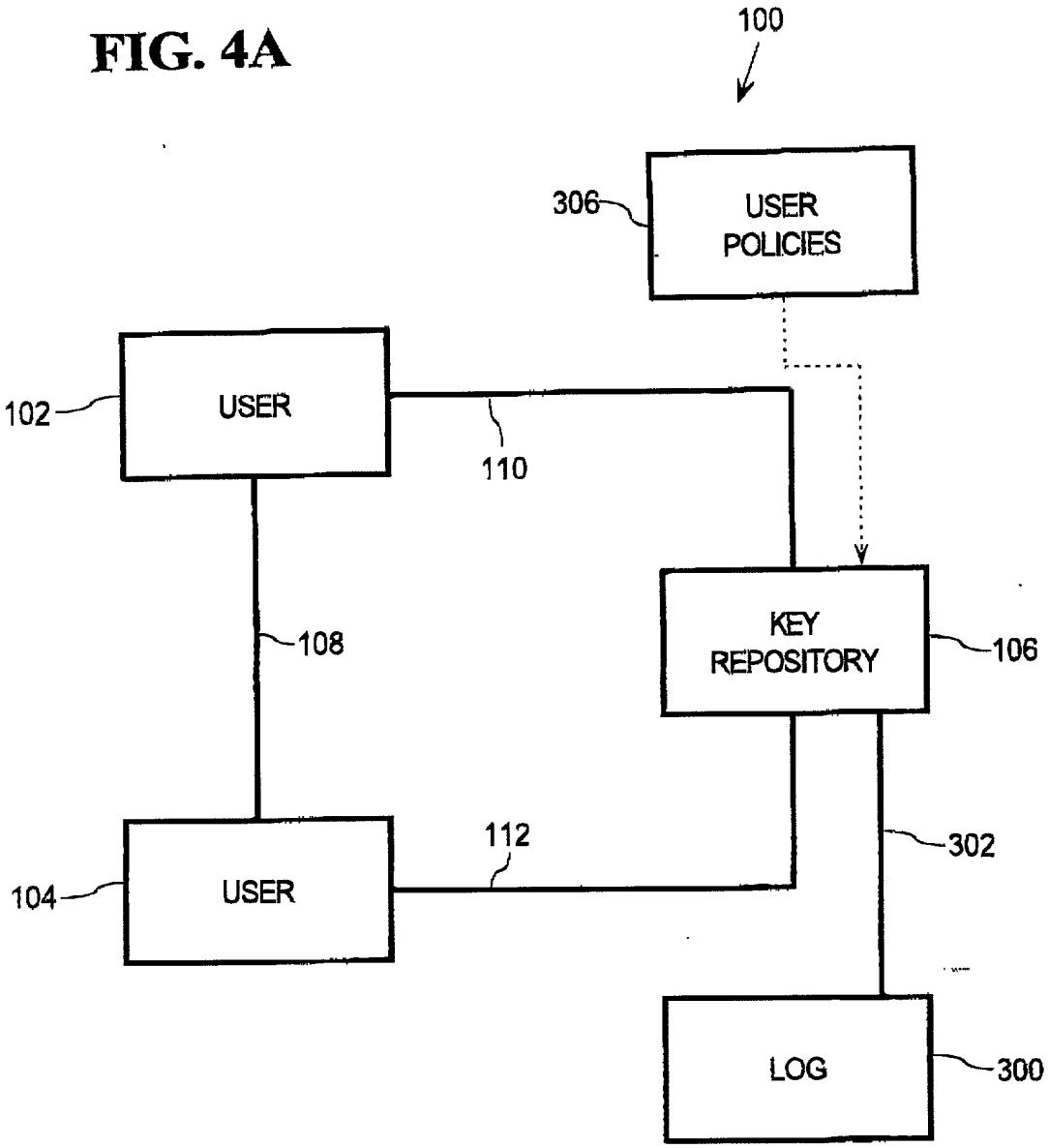

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FIG. 4B

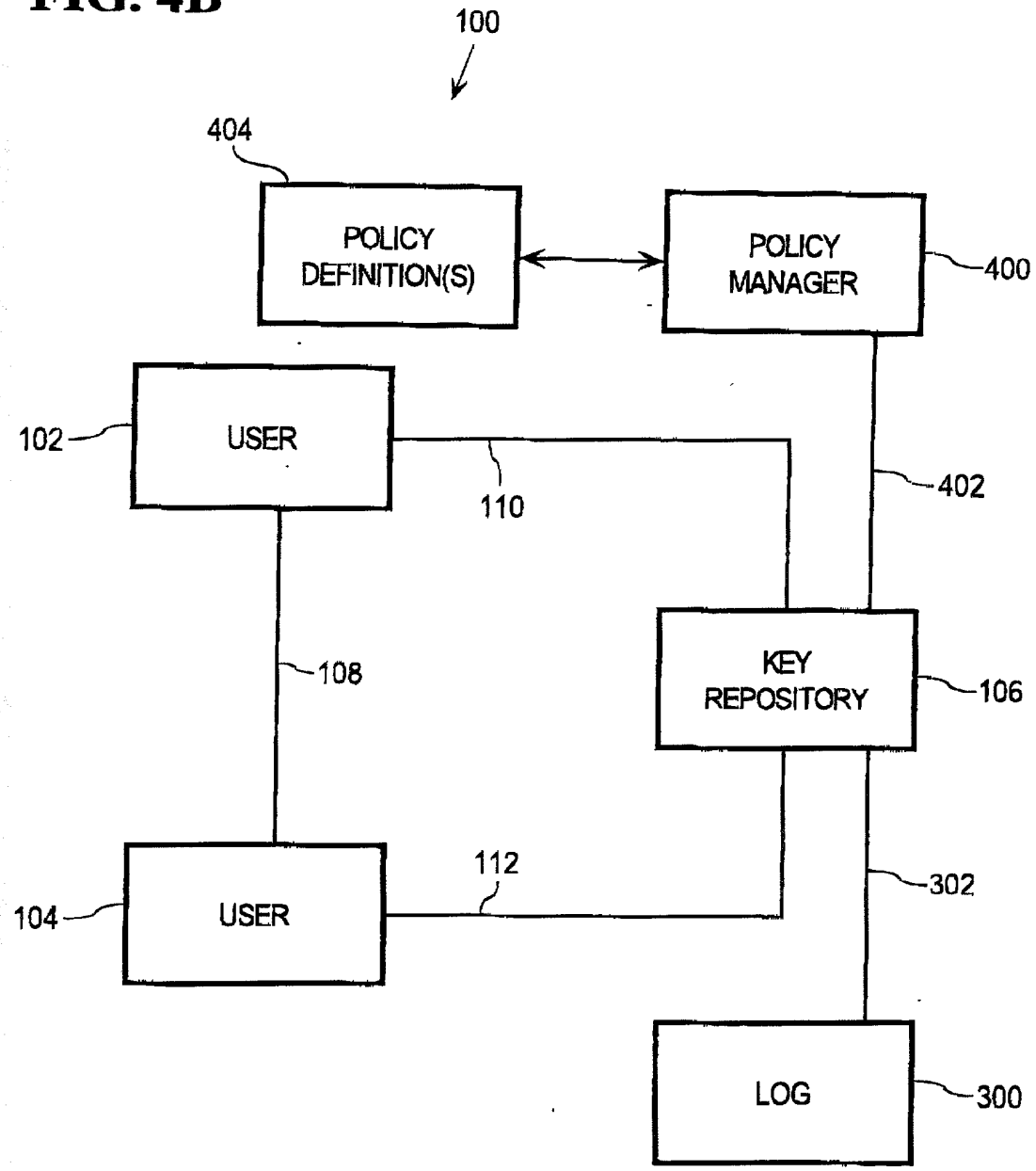

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FIG. 4C

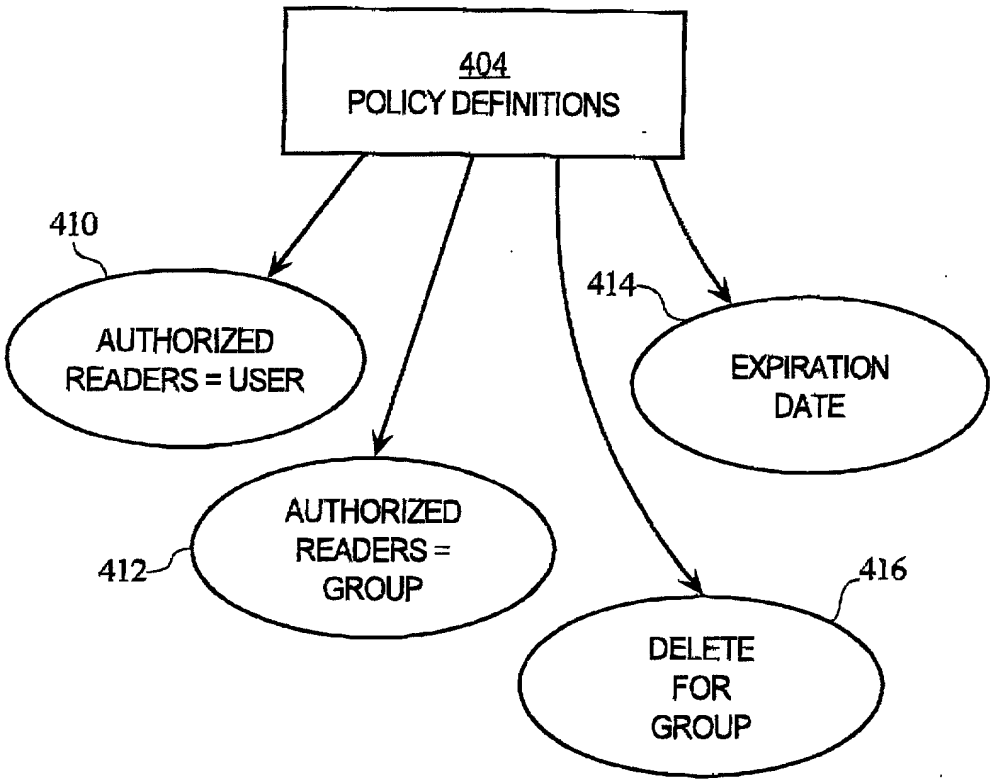

FIG. 5A

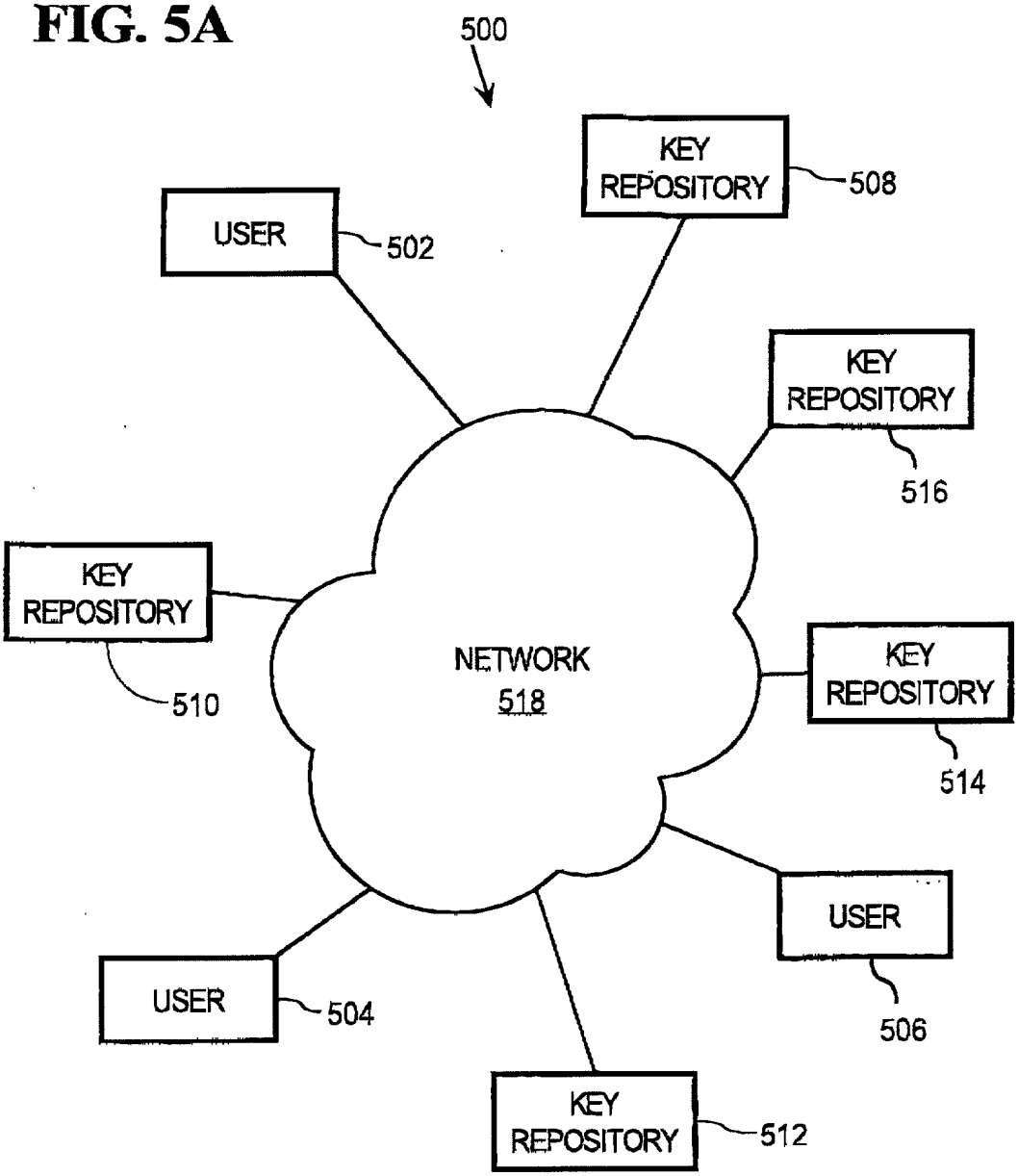
500
KEY REPOSITORY
508
USER
502
KEY REPOSITORY
516
KEY REPOSITORY
510
NETWORK
518
KEY REPOSITORY
514
USER
506
USER
504
KEY REPOSITORY
512

FIG. 5B

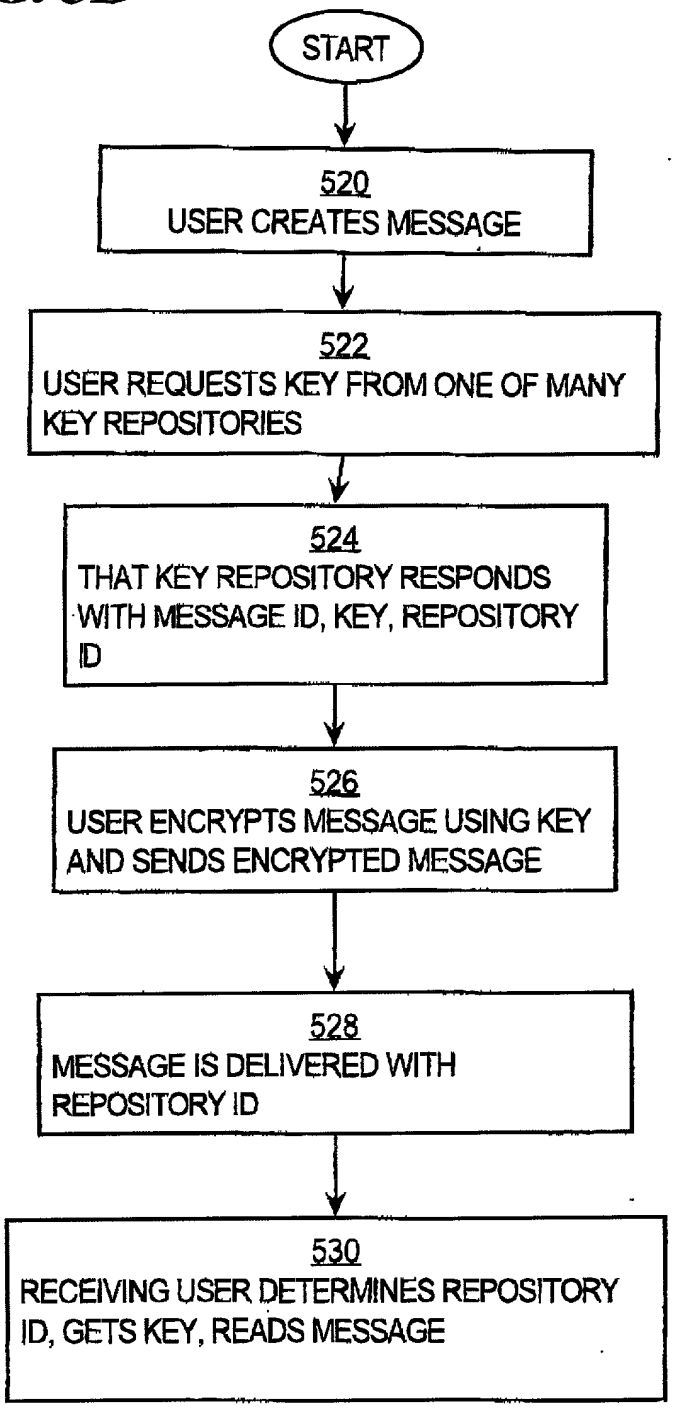
START
520
USER CREATES MESSAGE
522
USER REQUESTS KEY FROM ONE OF MANY KEY REPOSITORIES
524
THAT KEY REPOSITORY RESPONDS WITH MESSAGE ID, KEY, REPOSITORY ID
526
USER ENCRYPTS MESSAGE USING KEY AND SENDS ENCRYPTED MESSAGE
528
MESSAGE IS DELIVERED WITH REPOSITORY ID
530
RECEIVING USER DETERMINES REPOSITORY ID, GETS KEY, READS MESSAGE

FIG. 6A

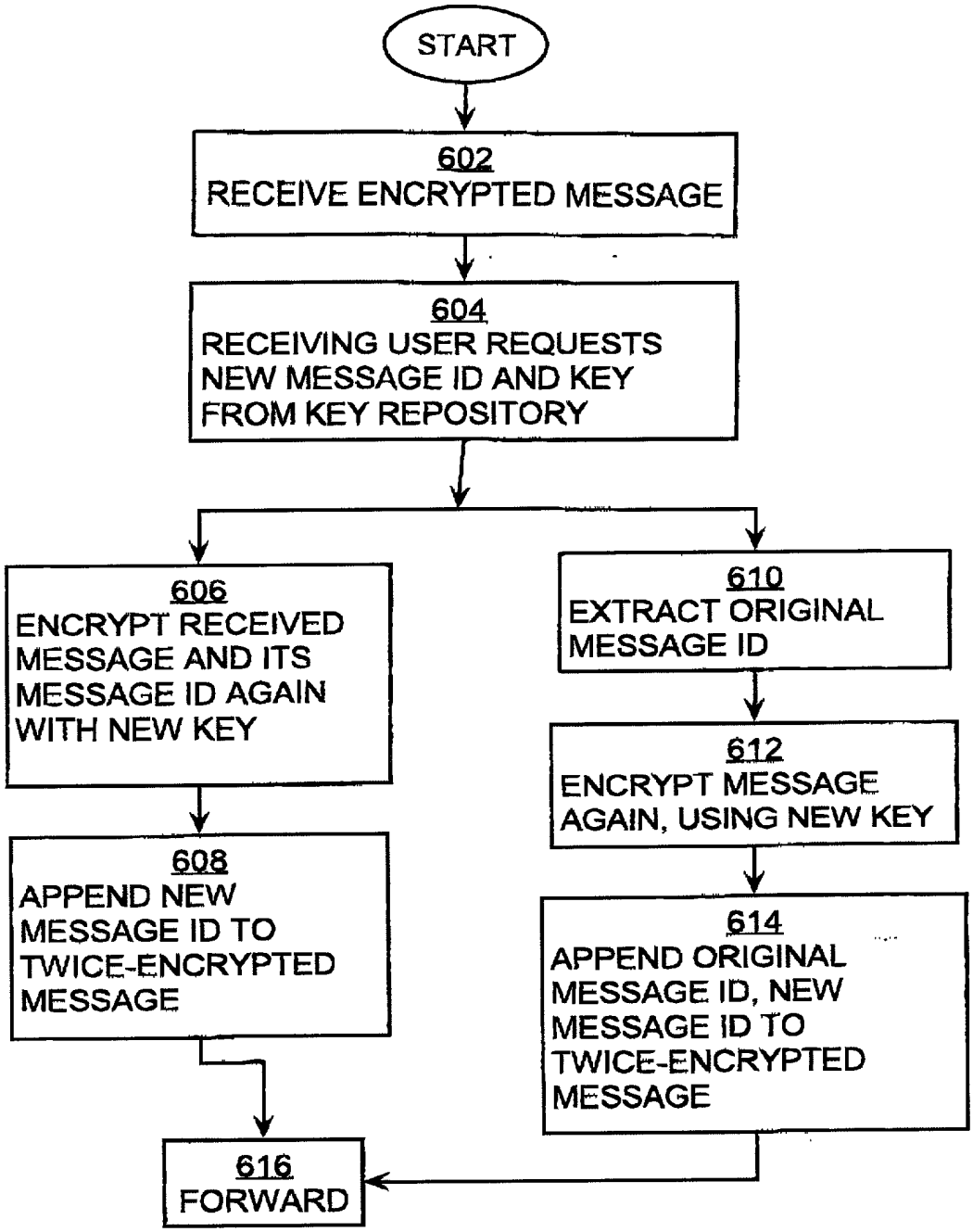
START
602
RECEIVE ENCRYPTED MESSAGE
604
RECEIVING USER REQUESTS NEW MESSAGE ID AND KEY FROM KEY REPOSITORY
606
ENCRYPT RECEIVED MESSAGE AND ITS MESSAGE ID AGAIN WITH NEW KEY
608
APPEND NEW MESSAGE ID TO TWICE-ENCRYPTED MESSAGE
610
EXTRACT ORIGINAL MESSAGE ID
612
ENCRYPT MESSAGE AGAIN, USING NEW KEY
614
APPEND ORIGINAL MESSAGE ID, NEW MESSAGE ID TO TWICE-ENCRYPTED MESSAGE
616
FORWARD

FIG. 6B

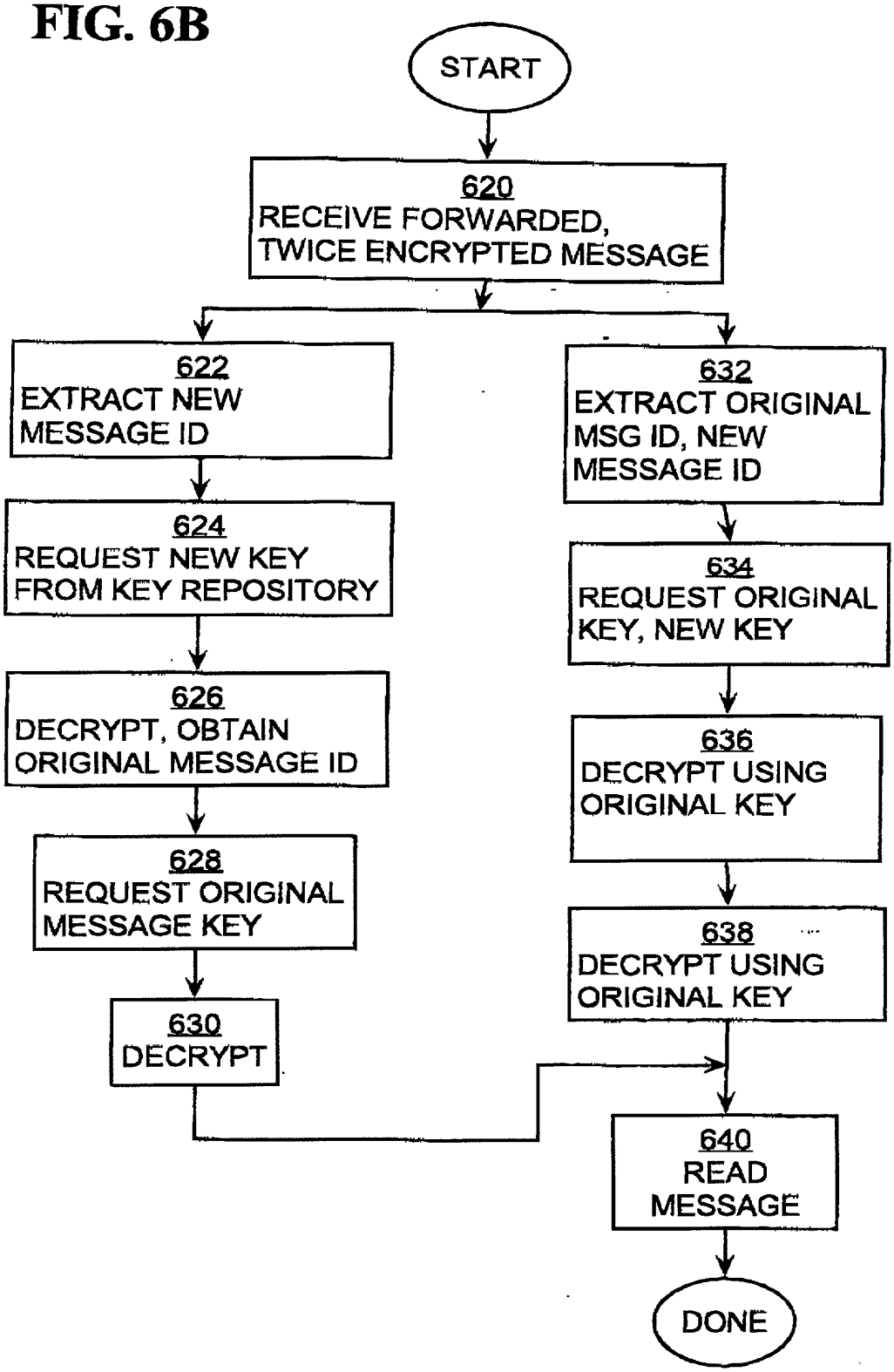
START
620
RECEIVE FORWARDED, TWICE ENCRYPTED MESSAGE
622
EXTRACT NEW MESSAGE ID
624
REQUEST NEW KEY FROM KEY REPOSITORY
626
DECRYPT, OBTAIN ORIGINAL MESSAGE ID
628
REQUEST ORIGINAL MESSAGE KEY
630
DECRYPT
632
EXTRACT ORIGINAL MSG ID, NEW MESSAGE ID
634
REQUEST ORIGINAL KEY, NEW KEY
636
DECRYPT USING ORIGINAL KEY
638
DECRYPT USING ORIGINAL KEY
640
READ MESSAGE
DONE

FIG. 6C

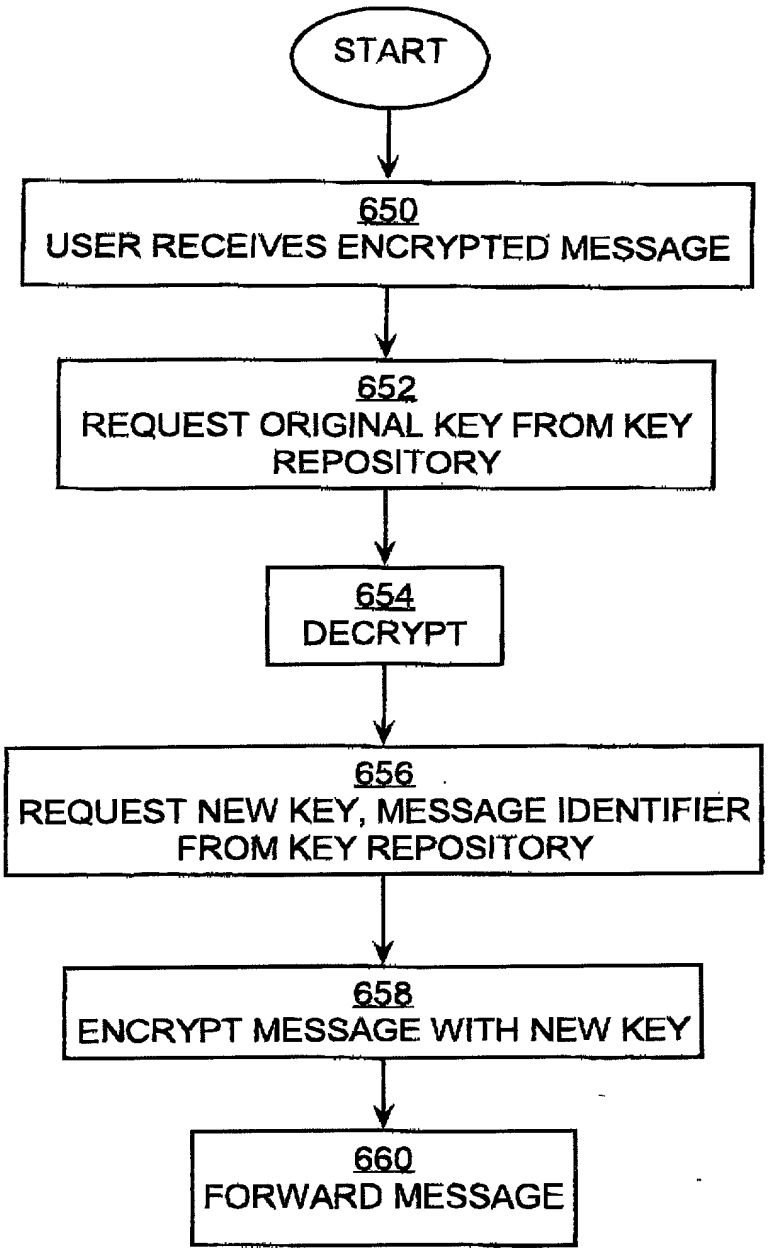
START
650
USER RECEIVES ENCRYPTED MESSAGE
652
REQUEST ORIGINAL KEY FROM KEY REPOSITORY
654
DECRYPT
656
REQUEST NEW KEY, MESSAGE IDENTIFIER FROM KEY REPOSITORY
658
ENCRYPT MESSAGE WITH NEW KEY
660
FORWARD MESSAGE

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FIG.7A

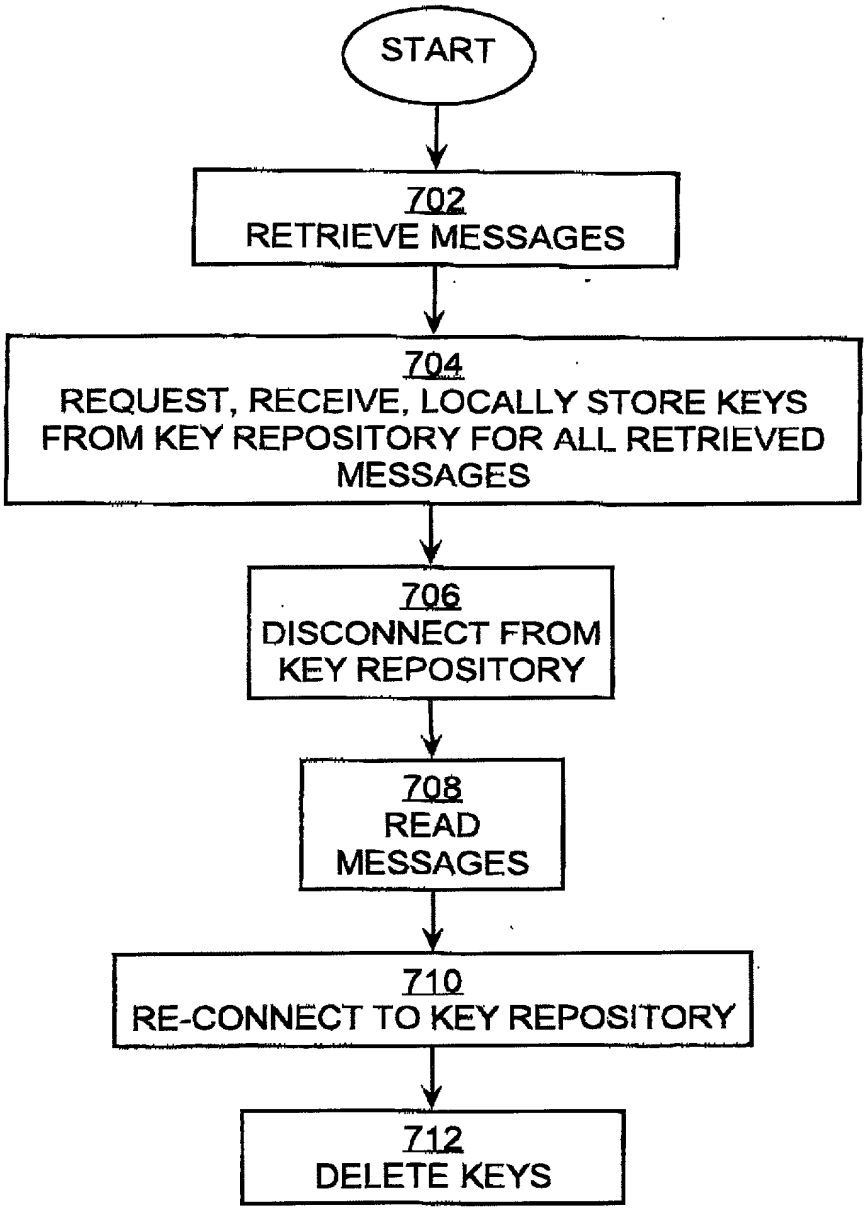

FIG. 7B

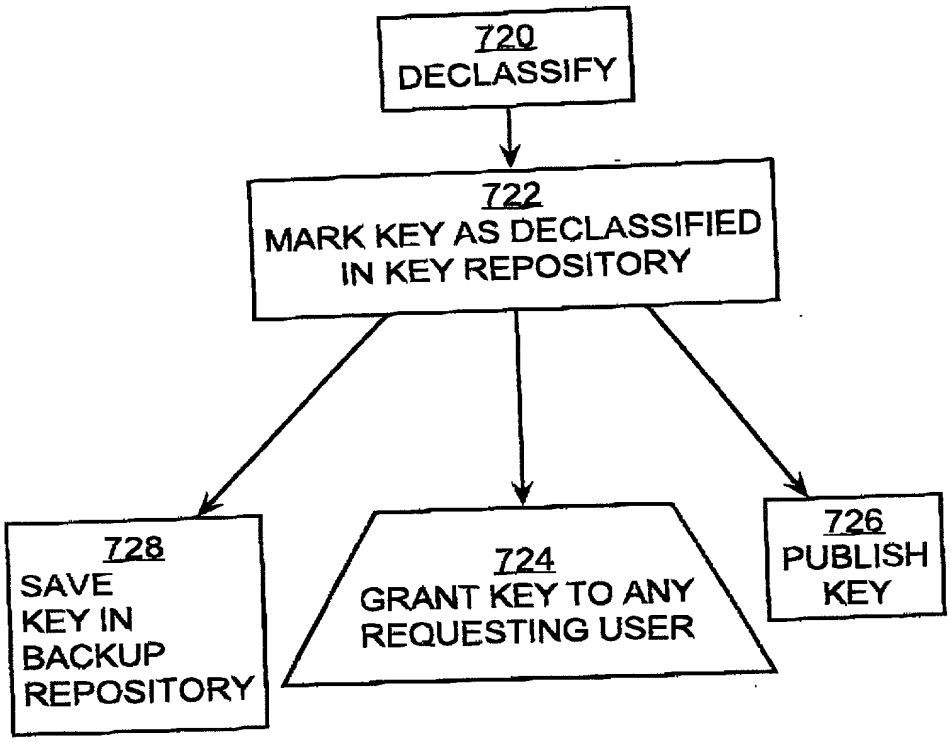
720
DECLASSIFY
722
MARK KEY AS DECLASSIFIED IN KEY REPOSITORY
728
SAVE KEY IN BACKUP REPOSITORY
724
GRANT KEY TO ANY REQUESTING USER
726
PUBLISH KEY

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FIG. 8

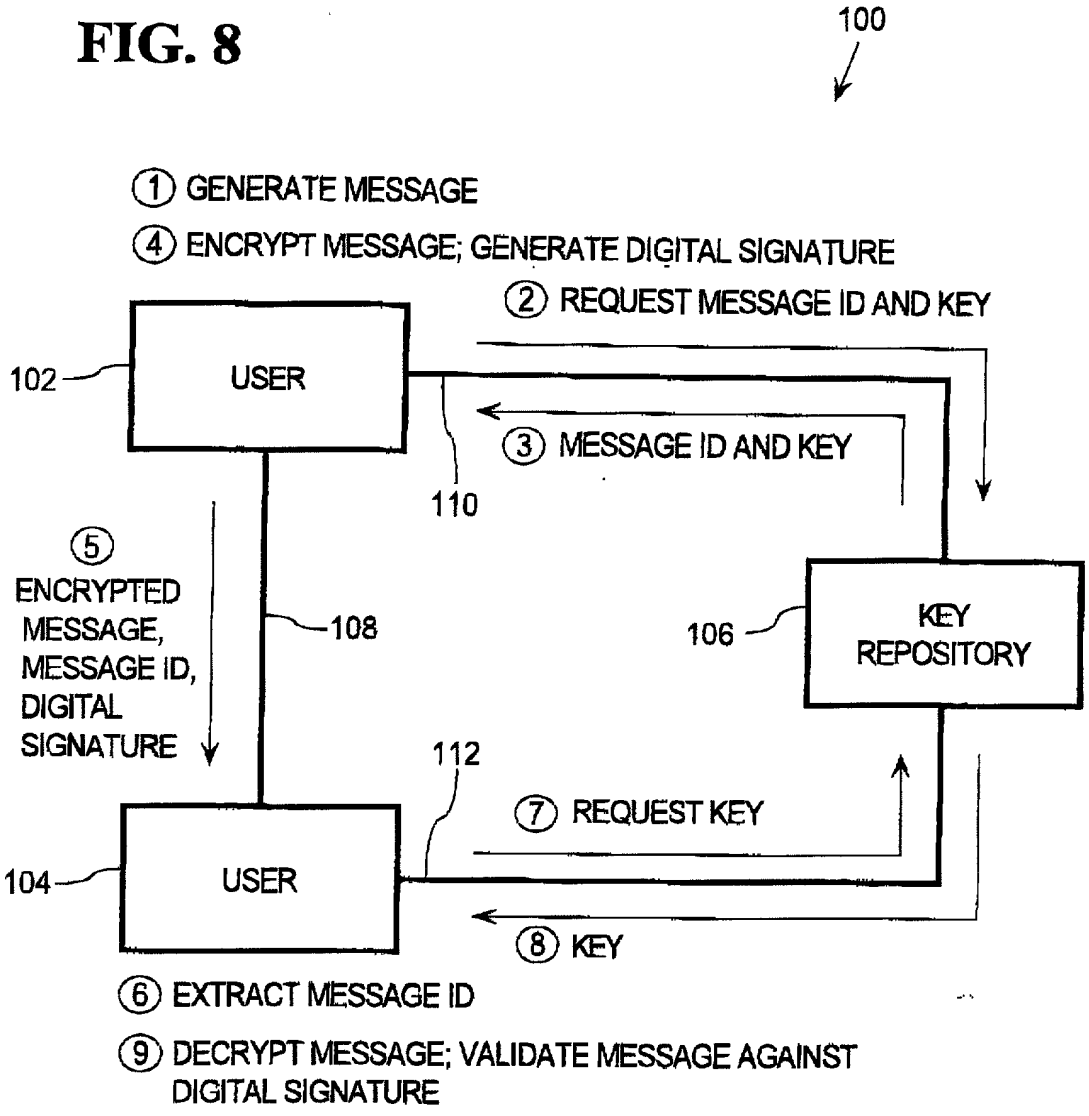

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FIG. 9

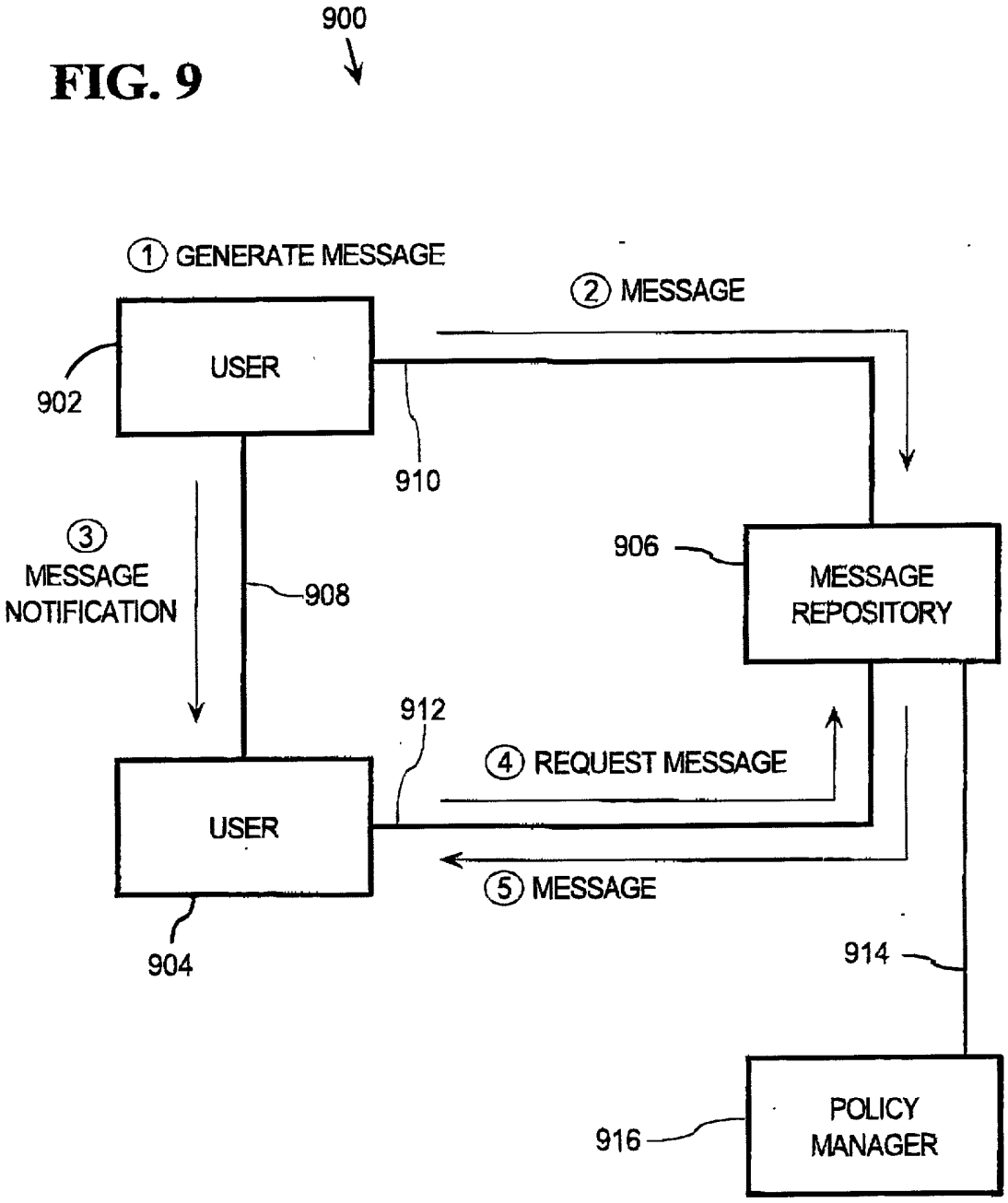

FIG. 10

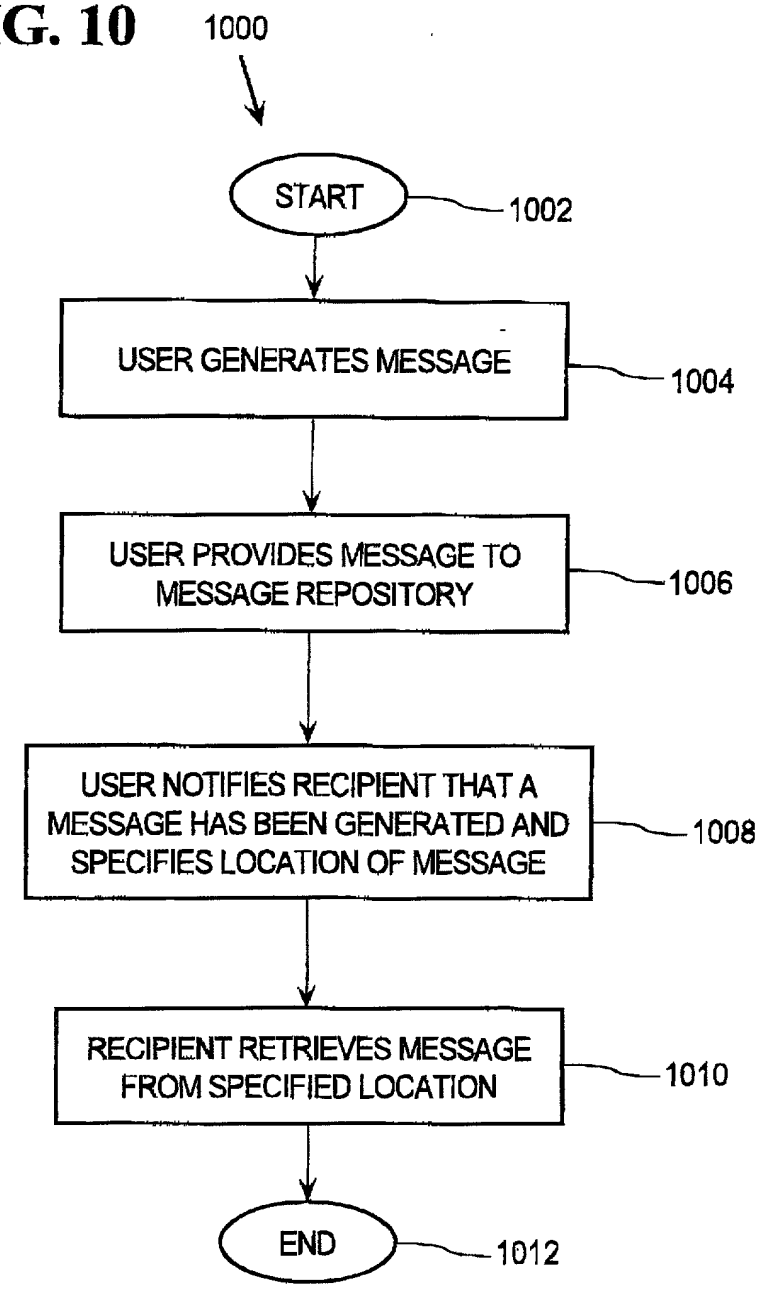
1000
START
1002
USER GENERATES MESSAGE
1004
USER PROVIDES MESSAGE TO MESSAGE REPOSITORY
1006
USER NOTIFIES RECIPIENT THAT A MESSAGE HAS BEEN GENERATED AND SPECIFIES LOCATION OF MESSAGE
1008
RECIPIENT RETRIEVES MESSAGE FROM SPECIFIED LOCATION
1010
END
1012

FIG. 11

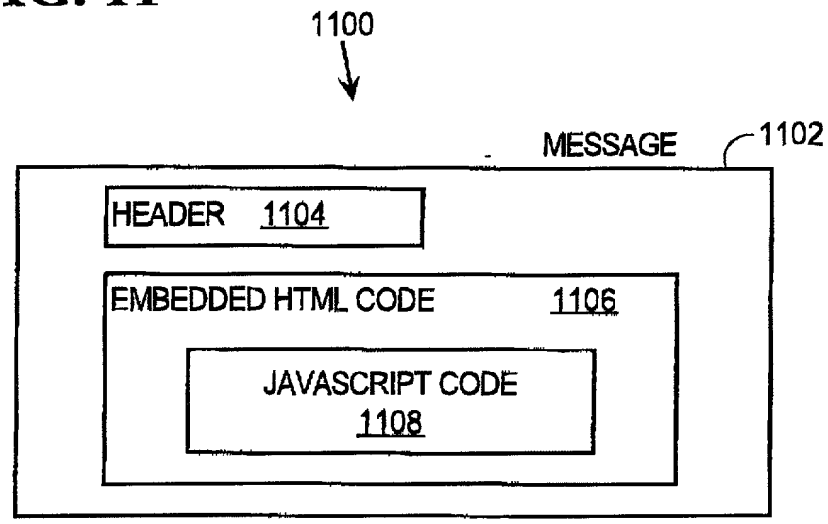

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FIG. 12

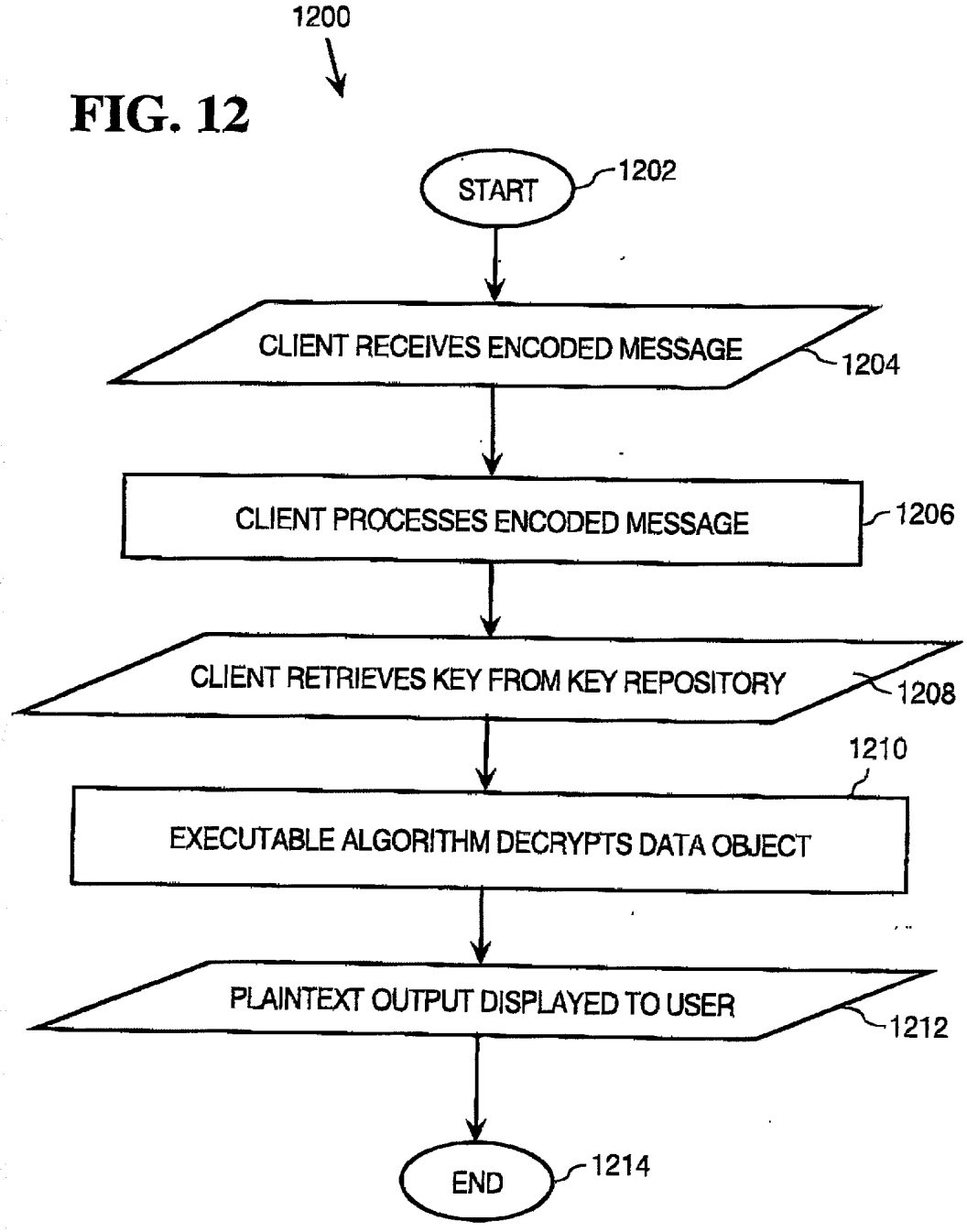
1200
START
1202
CLIENT RECEIVES ENCODED MESSAGE
1204
CLIENT PROCESSES ENCODED MESSAGE
1206
CLIENT RETRIEVES KEY FROM KEY REPOSITORY
1208
1210
EXECUTABLE ALGORITHM DECRYPTS DATA OBJECT
PLAINTEXT OUTPUT DISPLAYED TO USER
1212
END
1214

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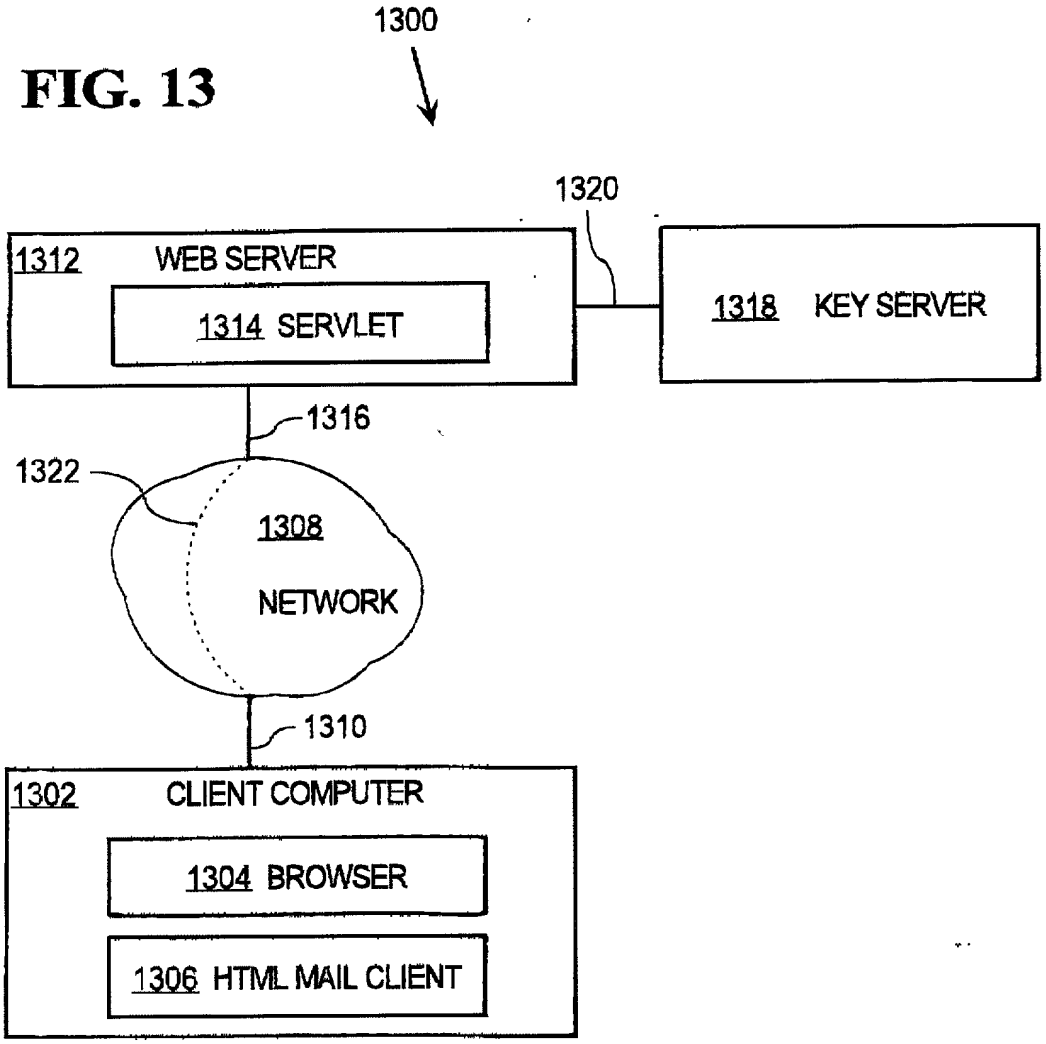
FIG. 13



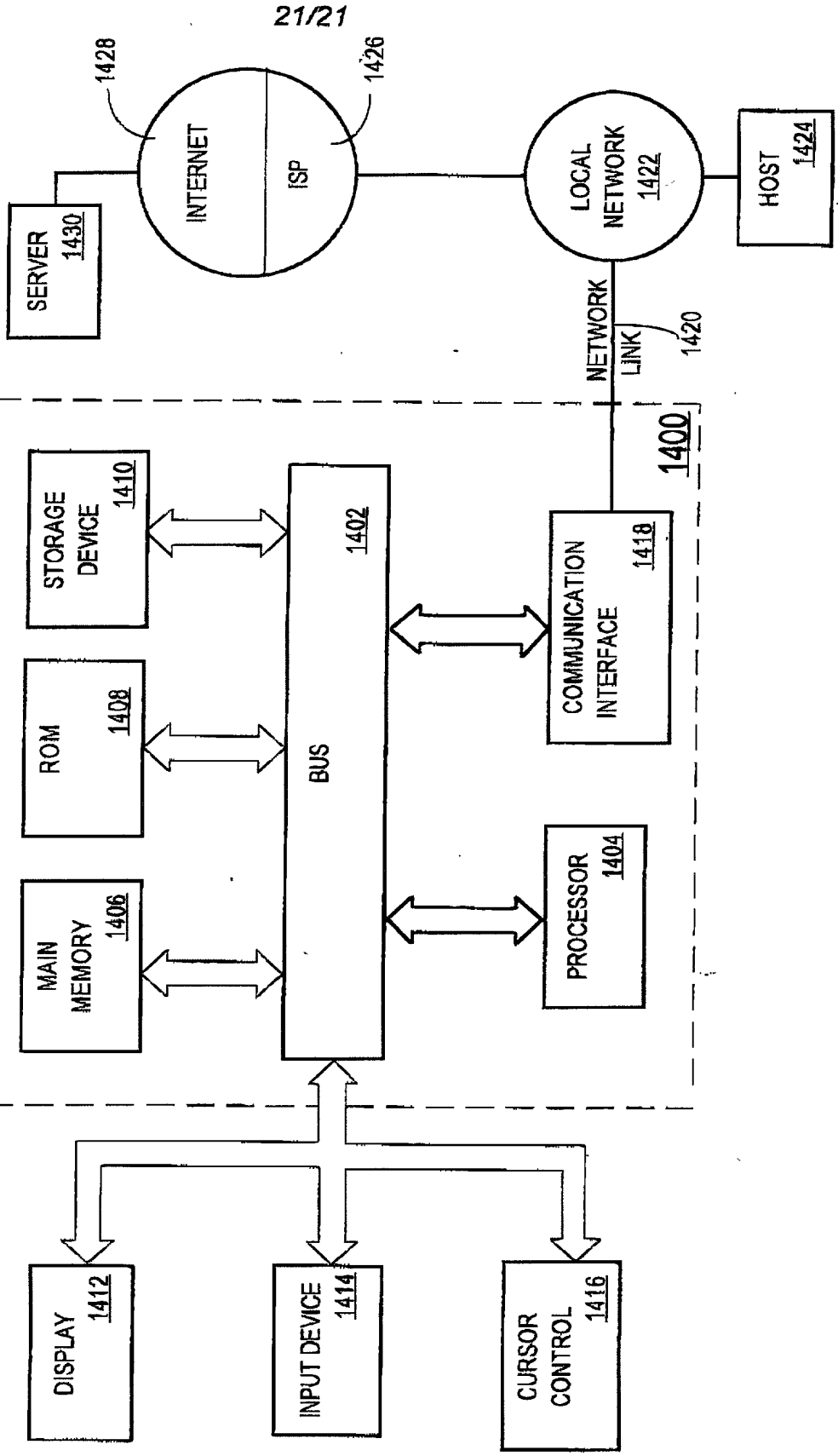

1428
1426
INTERNET
ISP
LOCAL NETWORK 1422
HOST 1424
SERVER 1430
NETWORK LINK 1420
1400
STORAGE DEVICE 1410
1402
COMMUNICATION INTERFACE 1418
ROM 1408
BUS
MAIN MEMORY 1406
PROCESSOR 1404
DISPLAY 1412
INPUT DEVICE 1414
CURSOR CONTROL 1416

FIG. 14